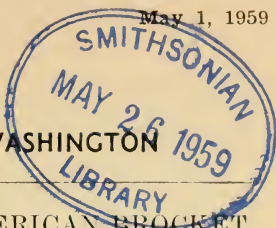


PROCEEDINGS
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A NEW SPECIES OF SOUTH AMERICAN BROCKET,
GENUS *MAZAMA* (CERVIDAE)

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The dwarf deer of the Amazonian flanks of the Andes of northern Bolivia and southern Peru variously recorded in scientific literature as pudu (*Pudu mephistophiles*) or as indeterminate brockets, prove to be representatives of a hitherto unnamed species of *Mazama*.

Thanks are here expressed to the authorities of the American Museum of Natural History for permission to describe the specimen here selected as type, and to the authorities of the United States National Museum for the loan of additional material.

The following abbreviations are used in the list of specimens examined:

AMNH = American Museum of Natural History

CNHM = Chicago Natural History Museum

USNM = United States National Museum

***Mazama chunyi*, new species**

[?] *Pudua mephistophelis* [sic], Matschie (not de Winton), 1899, Sitzb. Gesellsch. Naturf. Fr. Berlin, p. 130—part, BOLIVIA.

Pudu mephistophiles, Sanborn (not de Winton), 1952, Mus. Hist. Nat. "Javier Prado," (A), Zool., no. 12:8—PERU: Chuntahuampa, Sandia, Puno; San Juan, Sandia, Puno.

[?] *Pudua* sp., Eaton, 1916, Mem. Connecticut Acad. Arts Sci., 5:15—PERU: Machu Picchu, Cusco (scapula in Indian burial cave).

Pudua [sp.], Tate, 1931, Journ. Mammal., 12:252—BOLIVIA: "temperate forest of the eastern slopes of the Cordillera Real."

Mazama species, Thomas, 1920, Proc. U.S. Nat. Mus. 58:242—PERU: Santa Ana, Cusco, 3480 feet.

Mazama sp., Sanborn, 1951, Publ. Mus. Hist. Nat. "Javier Prado," (A), 6:25—PERU: Tio, Marcapata, Cusco, 2000 meters.

Type.—Male, juvenal, skin and skull, American Museum of Natural History no. 73098; collected 28 May, 1926, by G. H. H. Tate.

Type locality.—Cocopunco, a site on the eastern slope of the Cordillera Real on the road to Mapiri, La Paz, Bolivia; altitude, about 3200 meters.

Distribution.—The Andes of northwestern Bolivia and southeastern Peru in the headwaters of the Río Beni (La Paz, Bolivia), Río Madre de Dios (Puno and Cusco, Peru), and the Río Urubamba (Cusco).

Diagnosis.—Smallest species of *Mazama*, size as in *Pudu pudu*.

Description.—General color of head and body cinnamon brown to rufous brown, shoulders and outer side of limbs more uniformly brown

than back; individual cover hairs of back drab basally, buff or rufous terminally except for the fine dark brown tips; inner side of ears, lateral narial patch and mental patch white; throat, chest, inner sides of fore and hind legs buff to ochraceous-tawny; belly white; tail short, like rump above, sharply defined white beneath; external opening of pre-orbital gland small; tarsal and metatarsal tufts present and concealing corresponding glands; fore and hind hoofs long and slender, their greatest width slightly more or less than one-half greatest length; dew claws longer than wide.

Nasals at midline shorter than frontals at midline; diastema shorter than alveolar length of upper cheek teeth; antorbital fossa shallow or dish-shaped, without fenestrations; superior portion of ascending ramus of premaxillary reaching lateral tips of nasals; long axis of antorbital vacuity oblique; area of vacuity less than one-half plane area of facial plate of lacrymal; greatest supraorbital breadth less than width of braincase (Plates 1, 2).

Antlers as usual in the genus, spike-like and, judged by a fragmentary skull from Santa Ana, Peru, short, delicately formed, directed straight back in line with dorsal plane of forehead, burr comparatively simple and little differentiated from pedicle.

Coloration of type.—Back and sides of head and body wood brown ticked with buff; juvenal spot pattern faintly defined on lower back; lateral band, chest and inner sides of thighs ochraceous buff, belly white; upper surface of muzzle, forehead, crown, outer side of ears, chin and lips brown, inner side of ears white; lateral narial patch trimmed in type, white in female from Tío, Peru; mental patch white, throat ochraceous buff; limbs brown.

Variation.—Peruvian specimens from San Juan (1500 meters) and Tío (2000 meters) are darker, more reddish brown on dorsal surface, more reddish on underparts, and with pelage harsher, than the type. The hairs at anterior base of each ear are whorled in the Tío specimen, and the lower anterior border of each ear presents a white patch. A trimmed pelt from Chuntahuampa, Peru (2500-3000 meters), is intermediate in color and texture of pelage between the specimens from lower altitudes and the type from 3200 meters above sea level.

Available material suggests that the difference in color between the pale holotype of the temperate zone of the Andes in Bolivia and the darker individuals of the subtropical zone of the same slope of the Andes in Peru, is clinal.

Measurements (in millimeters).—Those of the type, a juvenal with milk premolars and unerupted third molars, followed by the external measurements of an adult ♀ from Tío, Peru, and the cranial measurements of an adult ♀ from San Juan, Peru. Head and body, 706, 720; tail, 24,—; hind foot, 124, 164; ear,—, 63 (notch); greatest length of skull, 117, 146; zygomatic breadth, 60, 66.9; greatest supraorbital breadth, 35, 40; width of braincase, 43.2, 47.7; nasals 27.1, 37.9; diastema, 30.2, 40.5; cheek teeth, 37.8 ($\text{dpm}^2\text{—m}^2$), 44.7 ($\text{pm}^2\text{—m}^3$); antlers, from base of burr, in a male from Santa Ana, Peru, 51 (right), 52 (left).

Comparisons.—Though pudu-like in size and general appearance *Mazama chunyi* differs from true pudus (*Pudu pudu* Molina and *P.*

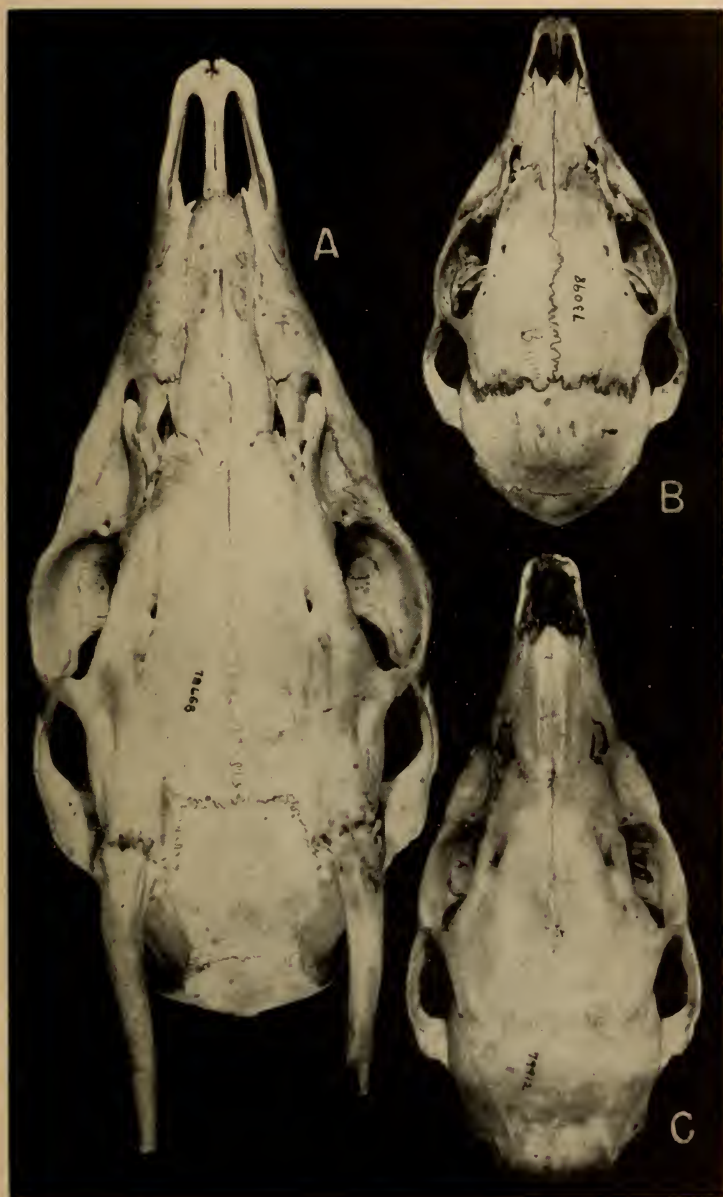


Plate 1

mephistophiles de Winton) chiefly by the following characters: External cuneiform present as a discrete tarsal bone; first incisor (Plate 5B) broadly spatulate, its greatest width more than combined width of second and third incisors; presence of white mental and narial patches; tail distinguishable from rump, its undersurface sharply defined white. The preorbital gland in *M. chunyi* is small, the preorbital fossa shallow, as in *Pudu mephistophiles*, while in *Pudu pudu* the gland is large, the fossa deep or bowl-shaped (Plate 3A-D).

The chunyi, or dwarf, brocket is distinguished from the much larger hed brocket, *Mazama americana*, the only sympatric congener, by absence of whorl or reversed direction of hair growth on nape, absence of supra-orbital streak or circumorbital band, and by the much shorter tail. The brown brocket, *Mazama gouazoubira*, averages smaller than the red, but is still appreciably larger than *M. chunyi*, paler throughout, with tail very much longer, supraorbital streak or spot usually present and hoofs broader. *Mazama rufina* described from the Andes of Ecuador, but not known to occur in Peru or Bolivia, differs from *M. chunyi* by its deeper red or reddish-black body color, contrastingly darker metapodials, and the extremely large preorbital gland with the correspondingly deep, bowl-shaped preorbital fossa as in *Pudu pudu* (Plate 3D).

Habitat and habits.—The discovery of the type specimen of *Mazama chunyi* is told by Tate (1931, Journ. Mammal., 12:252) as follows: "These diminutive deer have been recorded only occasionally. The temperate forest of the Cordillera Real (Bolivia) contains numbers of this animal. In the tangled moss-hung woods signs of them were frequent in the form of foot-prints and droppings. In one valley-head where they seemed most plentiful we set out a regular mine-field of steel traps and managed in this way to catch one."

Presence of the chunyi brocket in southeastern Peru was suspected by Mrs. Hilda Heller a year before she actually sent two specimens to the Chicago Natural History Museum. According to her field notes dated 1950, "there is a tiny red deer with spike horns in the hot and cold zones in forest land and in brush land in the Sandia and Tambopata valleys. It is called *chunitaruca*, *chuni* meaning small and *taruca* [or *taruga*] meaning deer." In her notes for 1951, Mrs. Heller corrected the spelling of the local name of the deer to *chuñitaruca*. She gives this account of the first specimen secured. "Chuñitaruca. M194♀ [CNHM 79912] . . . found in the Tambopata River at San Juan. The river had been high. The finders believed the hair [of most of the hide] had been torn off by the current or the friction of the rocks; the meat was considered fresh enough to eat. When I received the skin it was really dry, but I suspect, from a slight bloom on the moist part of the neck, that it would not stand tanning. Altitude or origin unknown. The species occurs at San Juan, 5000 feet, and at Sandia, 7,500 feet, perhaps higher." in addition to the damaged hide, Mrs. Heller salvaged the skull intact and the foot bones.

The second specimen, a hide with the head, limbs and tail trimmed off, was purchased in Sandia from a woman "who had it from her people in Chuntahuampa near Pucarimayo on the old road to Valle Grande at a fairly high altitude. They called it *chuñitaruca*."

Mrs. Heller adds that "December is the month in which [chunyi

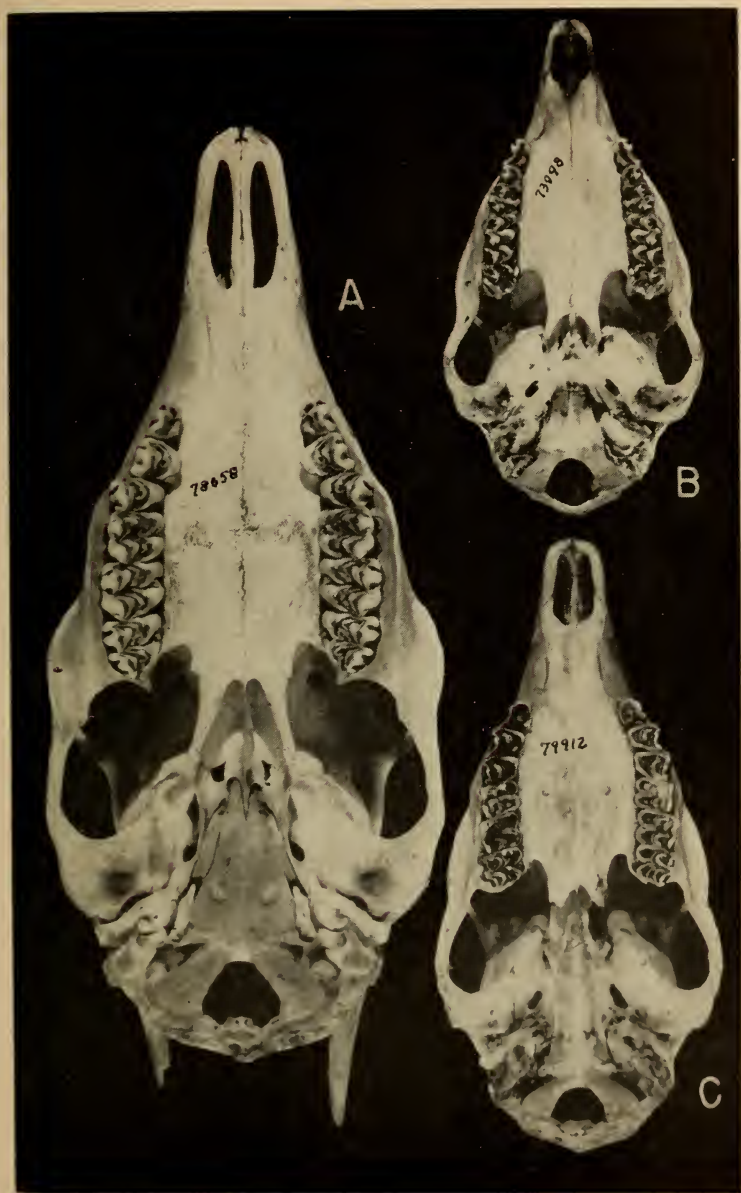


Plate 2

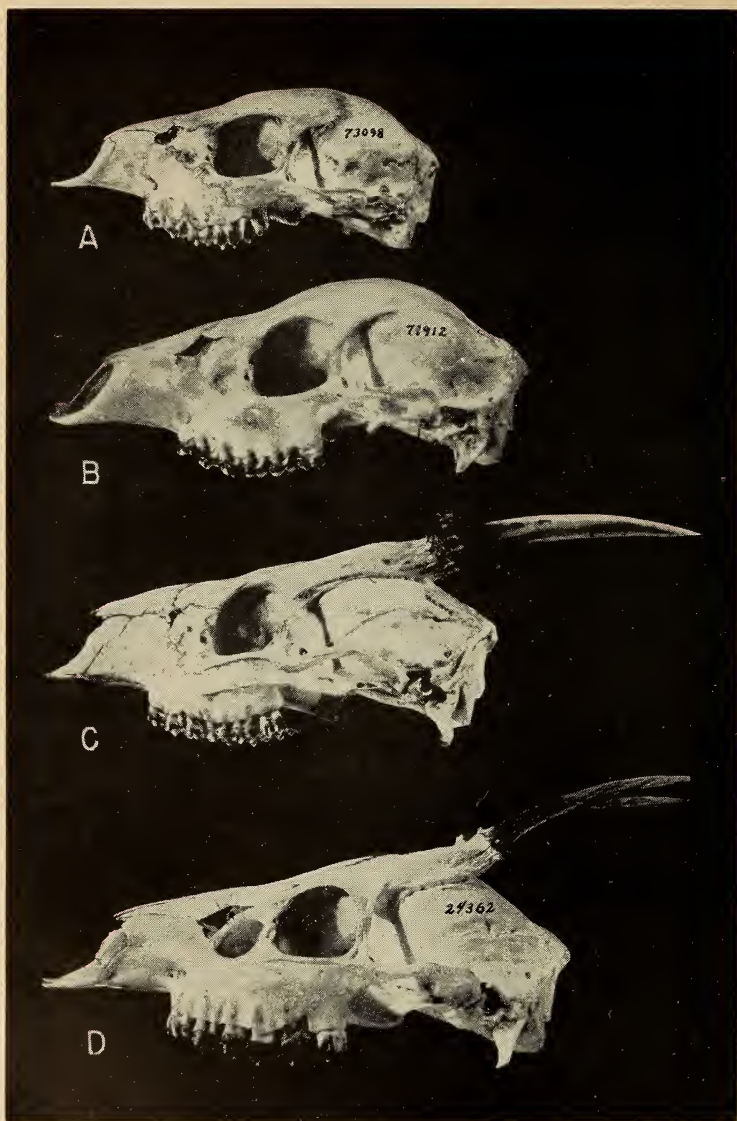


Plate 3

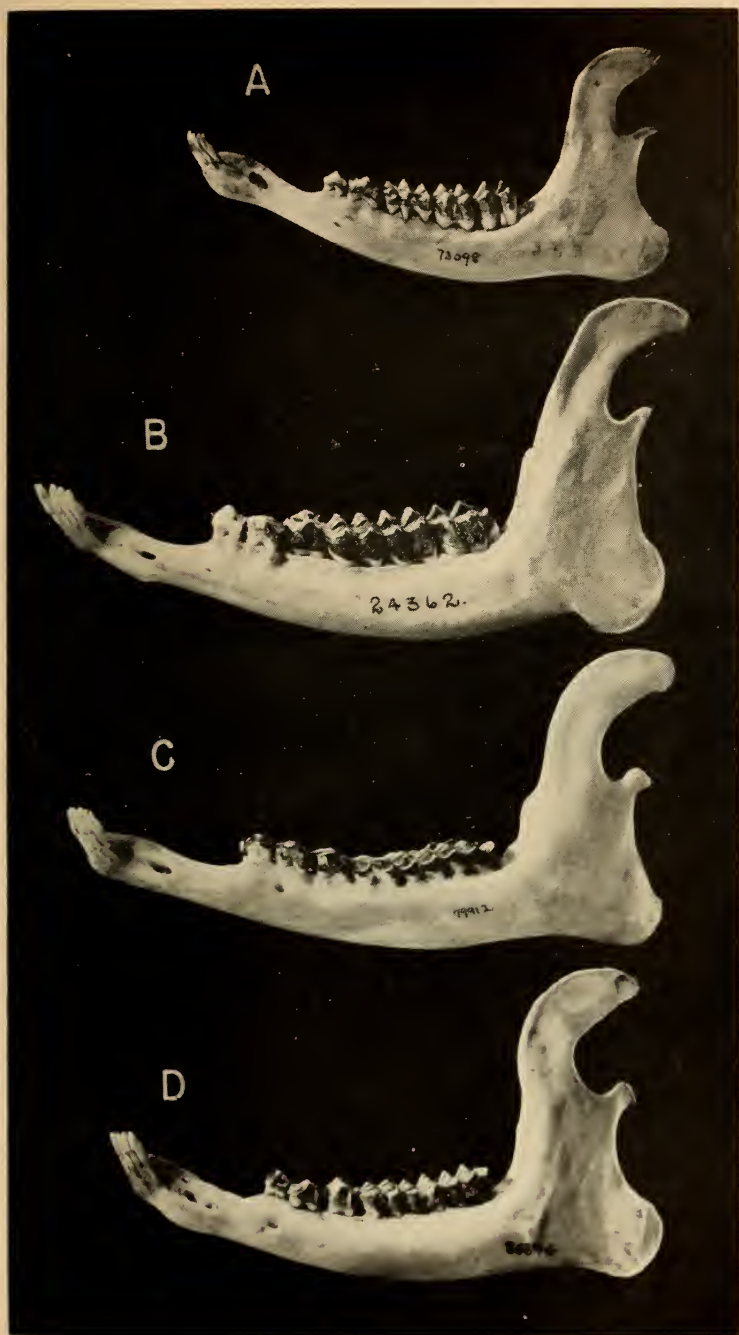


Plate 4

brockets] are usually obtained, for it is then that they come to eat potatoes. Because of their small size (weight about 25 pounds), they are not hunted by sportsmen for meat, but by the farmers in order to protect the potatoes.”

Remarks.—The external, osteological and dental characters of *Mazama chunyi* used in the above comparisons with the two known species of *Pudu*, serve to distinguish all brockets from pudus.

Present material representing *Mazama chunyi* is fragmentary but each part whether skin, skull or foot bones, is identifiable as representing an extremely small species of *Mazama*. The holotype, a juvenal male with the second upper molars not quite fully in place and without trace of antler pedicles, is the only specimen with both skin and skull in good condition. The state of each of the remaining specimens is described in the following section.

Specimens examined.—5. BOLIVIA: Cocopunco, La Paz, the type (AMNH); PERU: Tío, near Marcapata, Quispicanchi, Cusco, skin (CNHM); San Juan, Río Tambopata, Sandia, Puno, trimmed and partially bare skin, skull, foot bones (CNHM); Chuntahuampa, near Pucari-mayo, Río Huari Huari (upper Río Inambari), Sandia, Puno, 1 trimmed hunter's pelt (CNHM); Santa Ana, Río Urubamba, Cusco, posterior half of skull with antlers intact (USNM).



Plate 5.

Explanation of Plates.

Plate 1. Dorsal aspect of skulls of

A, *Mazama americana whitelyi* (Quincemil, Marcapata, Cusco, Peru).

B, *Mazama chunyi* (type, Cocopunco, Bolivia);

C, *Mazama chunyi* (San Juan, Peru).

All figures slightly over $\frac{1}{2} \times$ natural size.

Plate 2. Ventral aspect of same skulls shown in Plate 1.

Plate 3. Side view of skulls of

A, *Mazama chunyi* (type);

B, *Mazama chunyi* (San Juan, Peru);

C, *Pudu mephistophiles* (Malvasá, Cauca, Colombia);

D, *Pudu pudu* (Chiloé Island, Chile).

All figures slightly under $\frac{1}{2} \times$ natural size.

Plate 4. Left mandibles of

A, *Mazama chunyi* (type);

B, *Pudu pudu*;

C, *Mazama chunyi*;

D, *Pudu mephistophiles*.

All figures slightly over $\frac{1}{2} \times$ natural size.

Plate 5. Lower front teeth (approximately $\times 4$) of

A, *Pudu mephistophiles*;

B, *Mazama chunyi* (type).

